Overview of Service Southeast Regional efforts to select species

Gulf Coast Plains - Ozarks
Surrogate Species Training
October 2 – 3, 2012

Selecting Surrogate Species (Please, please, consider me…)





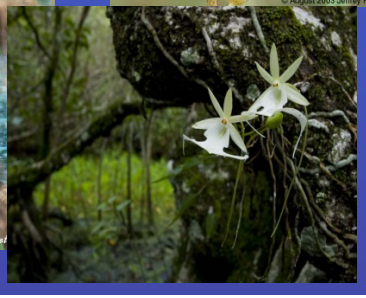


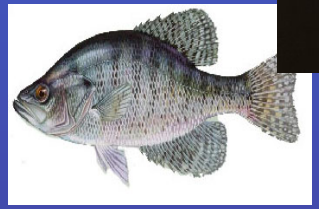












Main Questions

What are “Service Priority Species?”

What are some of the Lists that are available for selecting Surrogate Species?

How has the Southeast Region applied a trial process under SHC to select Species for conservation (2009 Biologists’ Conference)?

Summarize an example of the kind of efforts currently underway

What are “Service Priority Species?”

What are some of the Lists that are available for selecting Surrogate Species?

“Service trust species”

- Threatened and Endangered Species, Subspecies, and Vertebrate Populations (also candidates)
- Migratory Birds
- Interjurisdictional Fish (e.g., Anadromous and Catadromous species, Sport Fisheries in support of mitigating Federal Projects)
- Marine Mammals (i.e., for FWS, Manatee)
- Resident wildlife of State management interest or conservation concern, occurring on National Wildlife Refuges

Service Efforts to Prioritize Species

- Regional Priority Species (2007) which also included Fisheries
- Spotlight Species for Endangered, Threatened, Proposed, Candidate, and Species-at-Risk
- Birds of Management Concern (both hunted and non-hunted species) and Birds of Conservation Concern (non-hunted species)
- Resources (often Species) of Concern for Refuge Habitat Management Plans

Other Organizations and their Species Lists

Species of Greatest Conservation Need in State Wildlife Action Plans

Natural Heritage Rankings (managed by NatureServe and State Natural Heritage Programs

Southeast Aquatic Resources Partnership/ Southeastern Fishes Council

Bird “Watch Lists” (American Bird Conservancy, Audubon, Cornell Lab)

Partnership in Amphibian and Reptile Conservation

Southeast Bat Diversity Network

Xerces Society

North American Butterfly Association

Center for Plant Conservation

With all of these priorities and resources of regional importance how do we choose how much to do what and where?

- Recovery Plans for Threatened and Endangered Species
- Migratory Bird Conservation Plans (NAWMP, Flyway, PIF, Shorebirds, Waterbirds)
- Fishery Management Plans
- State Wildlife Action Plans, TNC Ecoregional Plans, etc.

Are these lists useful for identifying Surrogate Species?

Yes. These are a great place to start. We don't want to re-create any wheels.

Whether any individual species from these previous efforts will work depends on at least these factors:
(1)What geographies are established (how we divide up the landscape);
(2)Defining explicit conservation objectives (what do we really want);
(3)The information available for each potential Surrogate Species; and
(4)What species or group of species each Surrogate Species is intended to represent

How has the Southeast Region applied a trial process under SHC to select Species for conservation (2009 Biologists' Conference)?

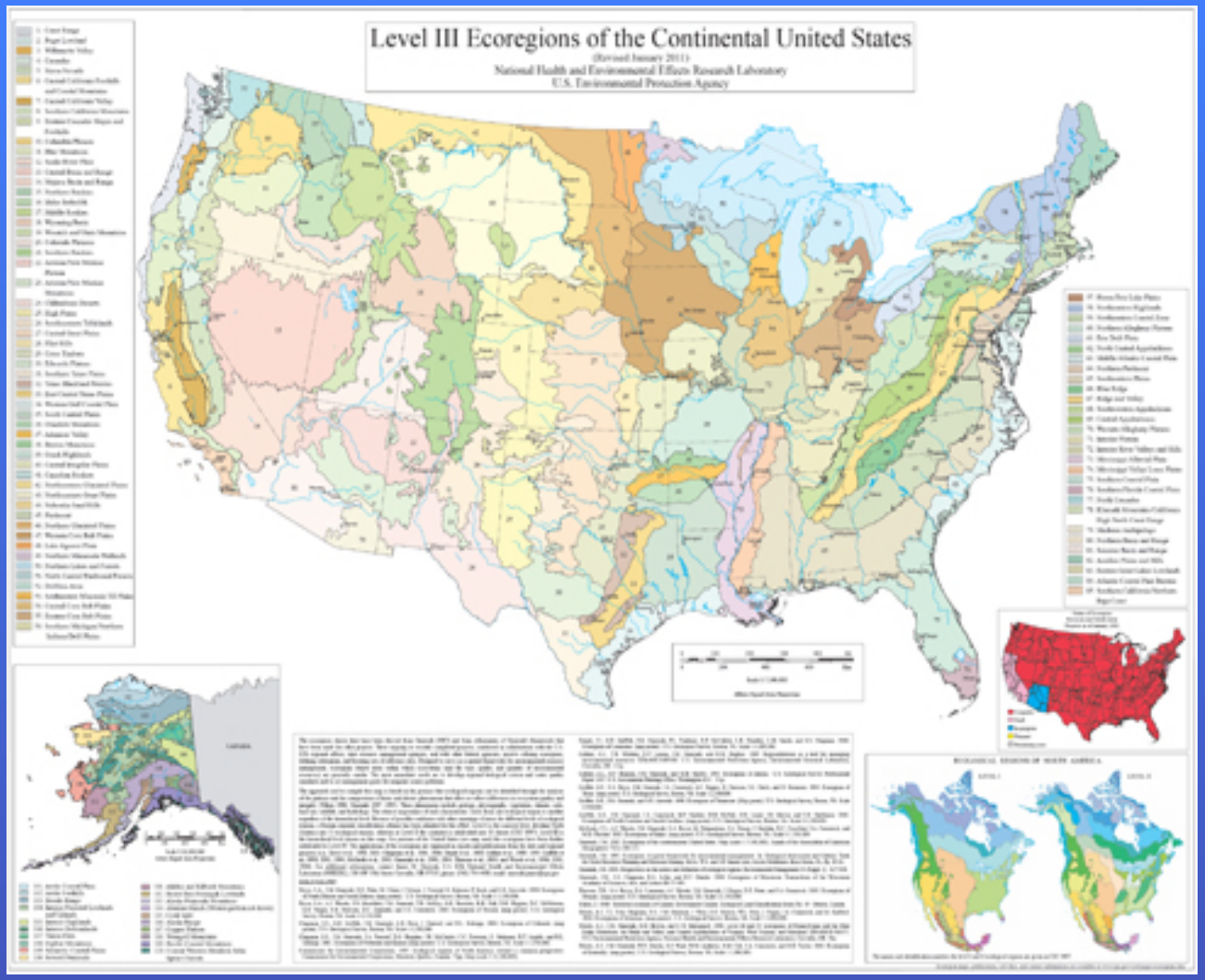
A Road Map For Implementing Strategic Habitat Conservation in the Southeast Region

- In 2008, the Regional Directorate established a committee to develop a road map to implement SHC
- One strategy was to define species and habitats that require conservation attention and are the responsibility of the Service in cooperation with conservation partners.
- Another strategy was to engage FWS staff at multiple levels

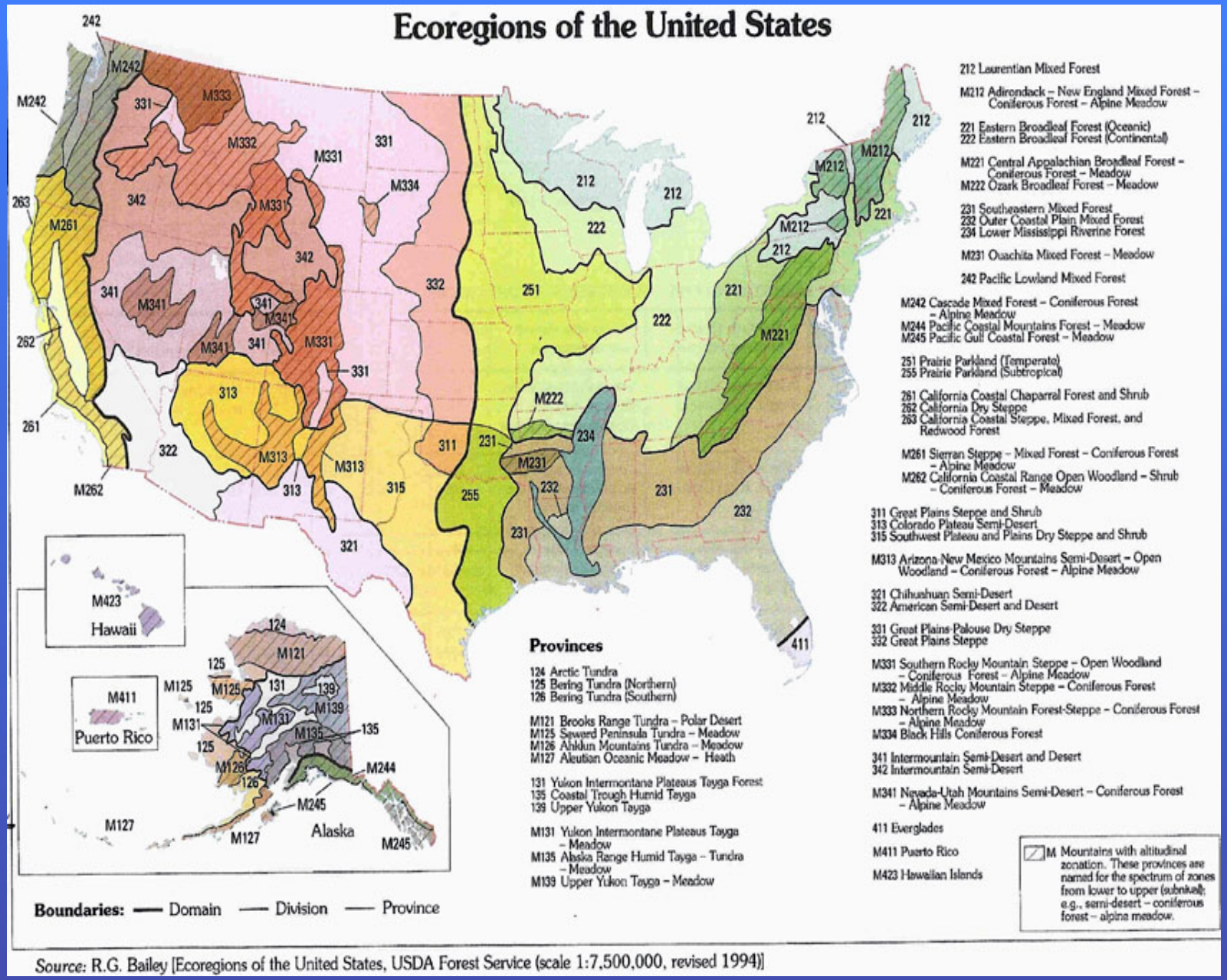
2009 Southeast Region Biologists' Conference

- A major objective of the Conference was to begin discussions with our Biologists on the implementation of SHC
- What are the Broadly Defined Habitats and Endangered Ecosystems in the Southeast?
- How do we define geographies consistent with physiographic and hydrologic divisions in the Southeast, and allow for efficient administration of SHC implementation?
- And how do these relate to Conservation of Service Priority Species?

Defining Geography and Habitat is not as simple as Defining “Priority” Species



Omernik's Level III Ecoregions



Source: R.G. Bailey [Ecoregions of the United States, USDA Forest Service (scale 1:7,500,000, revised 1994)]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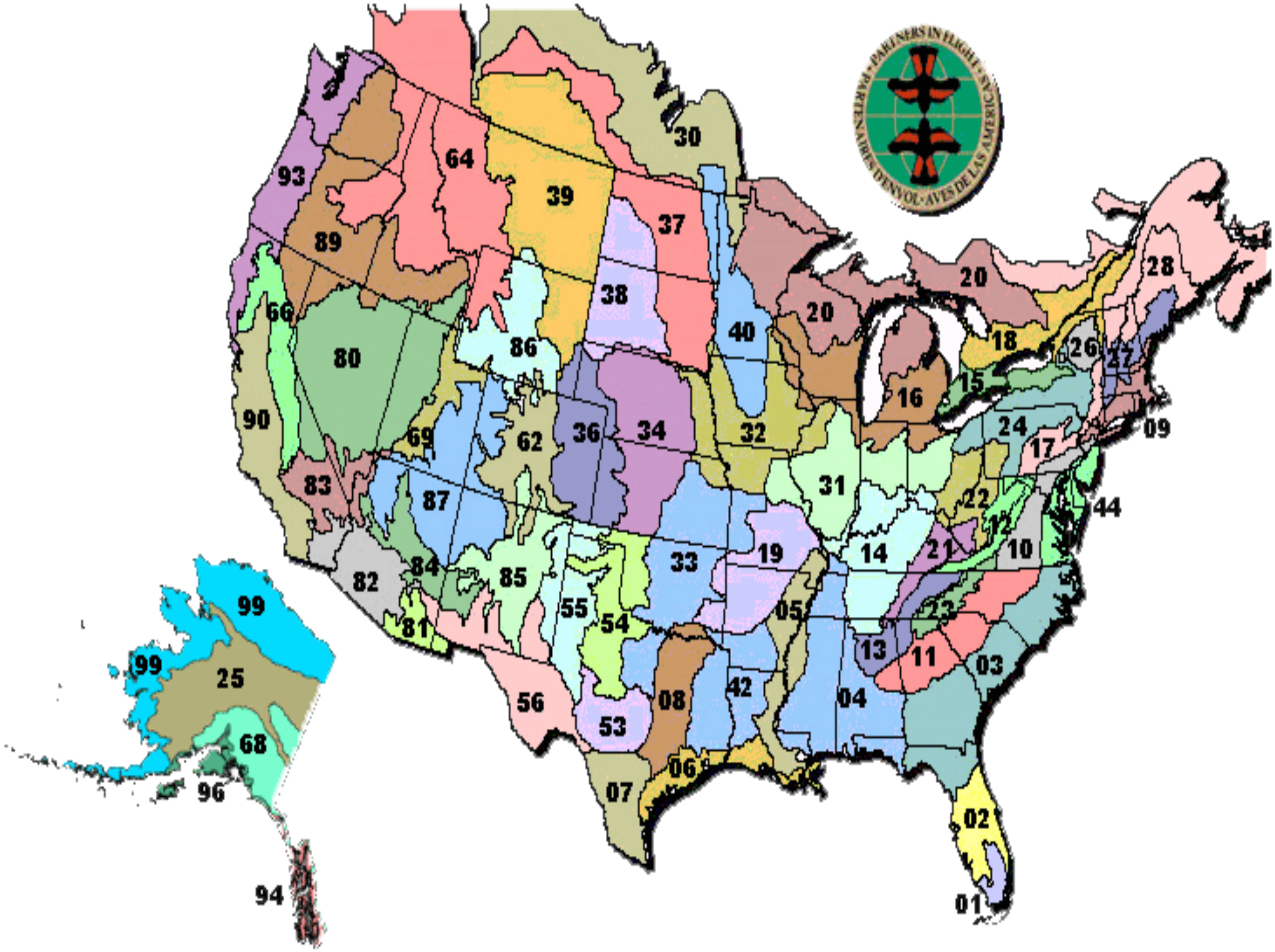
Tropic of Cancer
Tropic of Cancer
The Nature Conservancy
Saving the Last Great Places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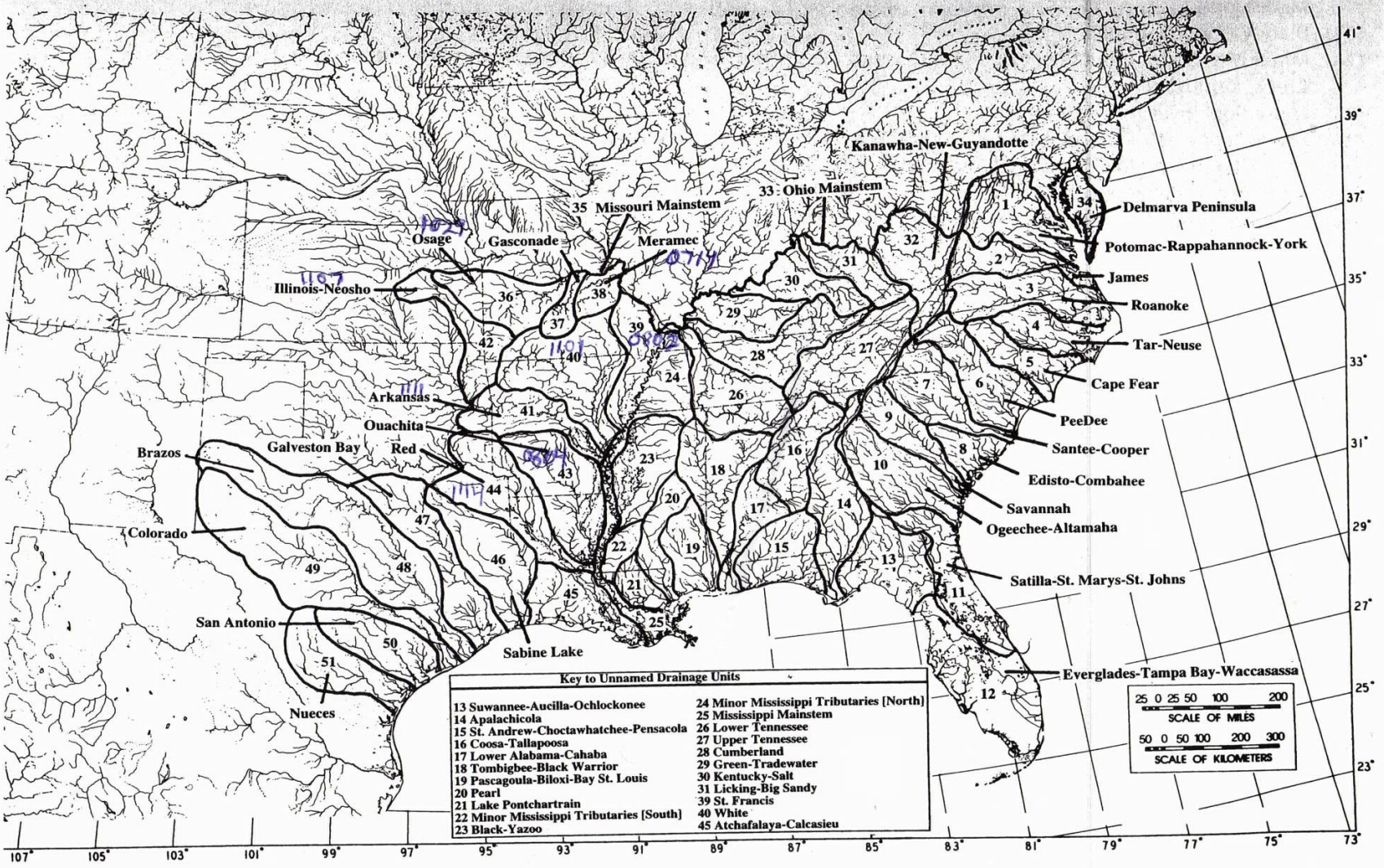


Figure 1. Drainage units (1-52) for the southern United States used to document distributional status of fishes. Drainage unit numbers reference Table 1. Drainage map courtesy of the University of Michigan Museum of Zoology.

Ecological Communities ("Broadly-defined Habitats") of the Southeast Region

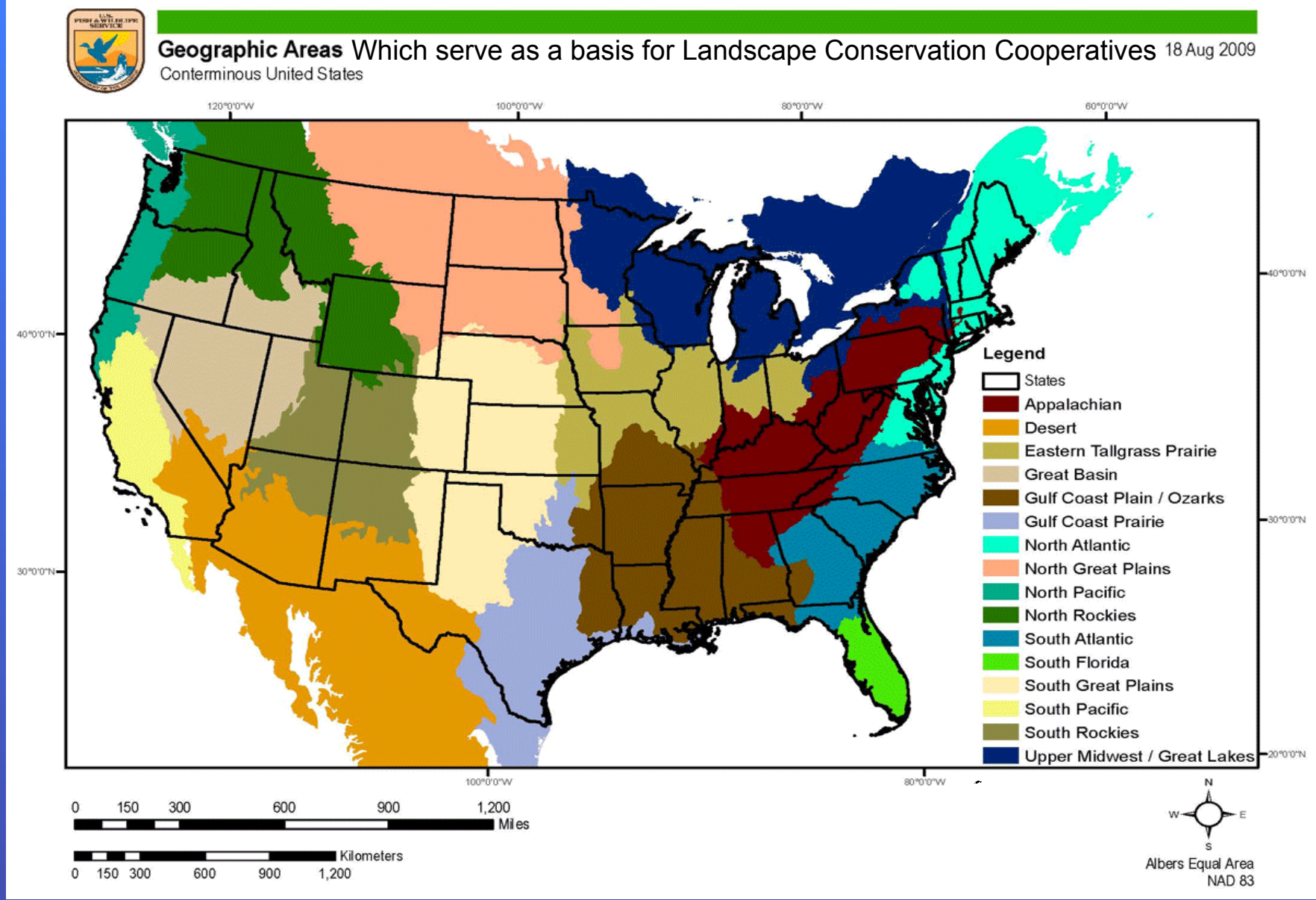
- Beaches and Dunes
- Caves, Karst, Springs
- Estuarine (marshes) & Marine
- Freshwater Aquatics
- Freshwater Marshes
- Freshwater Managed Wetlands
- Grasslands
- Forested Wetlands-mineral soil
- Forested Wetlands-organic soil (pocosins, Okefenokee)
- Montane Conifers and Upland Forests
- Southern "open" Pine
- Trop. Hardwoods, mangroves, s FL Slash Pine Rocklands
- Xeric (Florida) Scrub and Coastal scrub
- Other Shrub-scrub (glades, bogs, patch prairies)

Multi-species Umbrella Concept

- Identify a subset of species within broadly defined habitats ("Ecological Community" breakouts) representing the spatial requirements and range in habitat conditions for priority species associated with each habitat.

- We referred to these as "Umbrella Species."

- Also, "Umbrella Species Suites" are identified when a group of very locally occurring species collectively across the region represent important habitat conditions not otherwise captured above (such as for caves and for many species of locally occurring aquatic species, plants occurring on, e.g., glades, rock outcrops).


Geographic Areas Which serve as a basis for Landscape Conservation Cooperatives 18 Aug 2009
Conterminous United States
120°0'0"W
100°0'0"W
80°0'0"W
60°0'0"W
40°0'0"N
30°0'0"N
20°0'0"N
Legend
States
Appalachian
Desert
Eastern Tallgrass Prairie
Great Basin
Gulf Coast Plain / Ozarks
Gulf Coast Prairie
North Atlantic
North Great Plains
North Pacific
North Rockies
South Atlantic
South Florida
South Great Plains
South Pacific
South Rockies
Upper Midwest / Great Lakes
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Miles
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Summarize an example of the kind of efforts currently underway

Endangered Ecosystems: Southern "Open" Pine (mostly longleaf, slash, shortleaf, loblolly)

Critically Endangered (98% decline)

- Longleaf Pine Forests and Savannas of Southeastern Coastal Plain
- Loblolly-Shortleaf Pine and Hardwoods of West Gulf Coastal Plain

Endangered (85-98% decline)

- Wet Longleaf Pine Savanna and Longleaf Pine Woodland in Louisiana

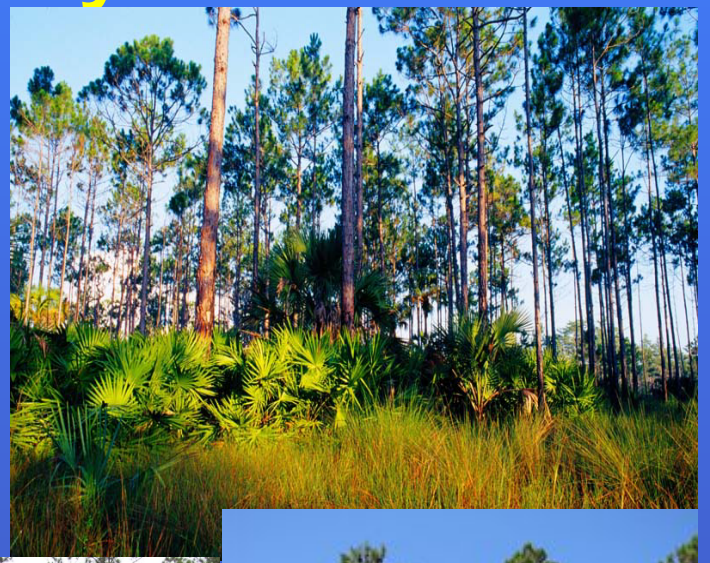
Rank Order of Broadly-defined Habitats supporting Spot-light Species

(1) Freshwater Aquatics
(2) Tropical Hardwoods-Pine Rockland
(3) Southern Pine
(4) Shrub-scrub (glades, barrens, rock outcrops, bogs, etc.)
(5) Beaches and dunes
(6.5) Caves, Karst, Springs
(6.5) Xeric and maritime shrub

Spotlight Species occurring in Southern "Open Pine

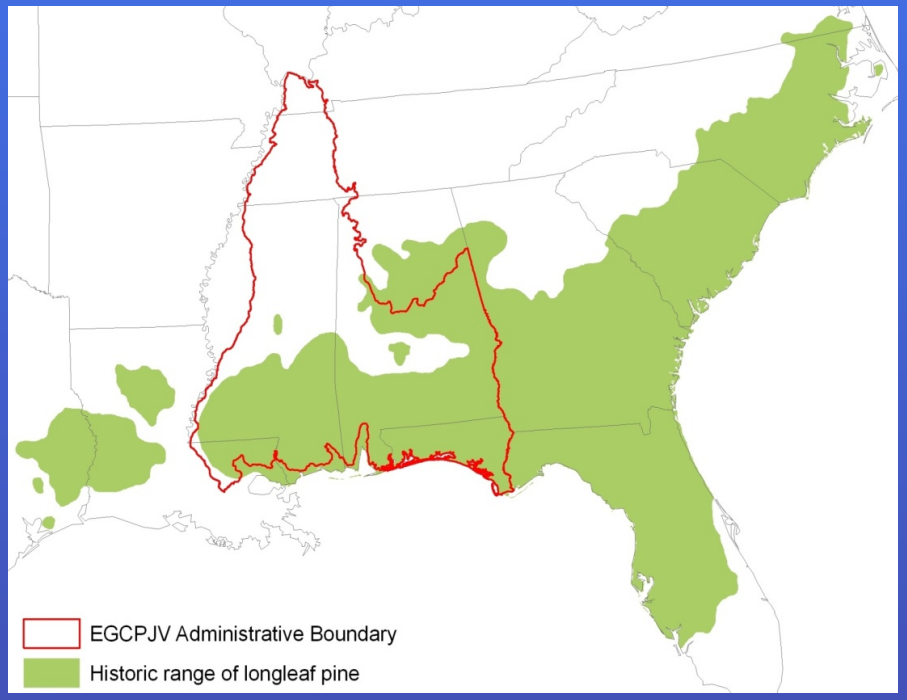
Gopher tortoise (unlisted range, also occurs in xeric scrub and grasslands, prairies, savannas)
Louisiana pine snake
Mississippi gopher frog
MS Sandhill crane (also occurs in grasslands, prairies and savannas)
Scrub buckwheat
Telephus spurge
Panama City crayfish
Aster spinulosus (Apalachicola/Georgia aster)

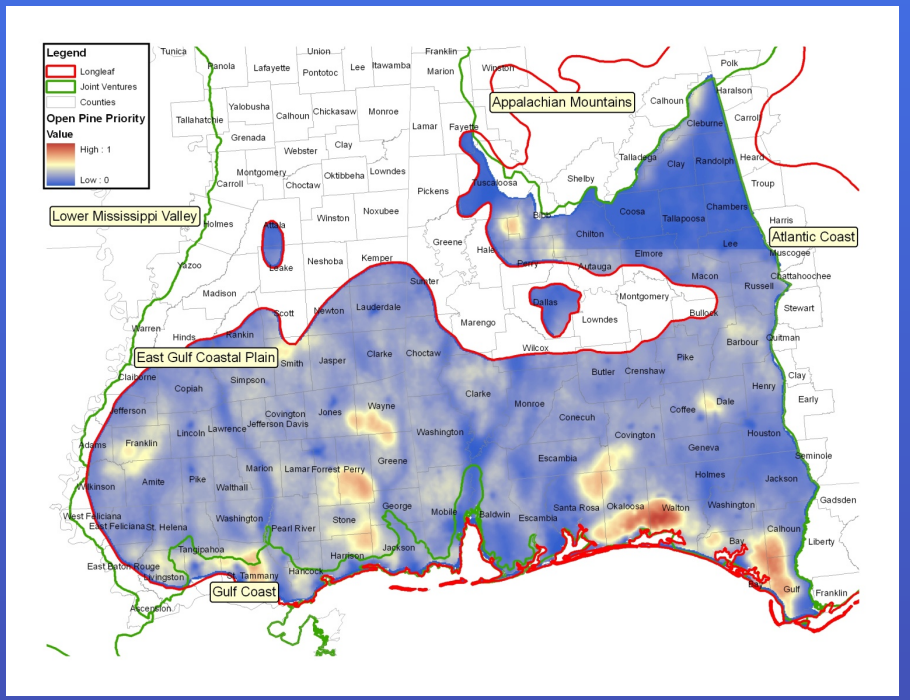
Open Pine Ecosystems



Use of Surrogate Species
East Gulf Coastal Plain

Open Pine Decision Support Tool





EGCJV Pine Forest Priority Species

- Red-cockaded Woodpecker
- SE American Kestrel
- Brown-headed Nuthatch
- Bachman's Sparrow
- Northern Bobwhite

What are area requirements to support 500 pairs/coveys/family groups of other priority open pine woodland species?

- Acreages below assume substantial areas included in landscapes that are unsuitable for these species

- Red-cockaded Woodpecker > 125,000 acres
  Red-headed Woodpecker ~ 25,000-50,000 acres
  Brown-headed Nuthatch ~ 15,000-30,000 acres
  Bachman's Sparrow ~ 15,000-30,000 acres
  Northern Bobwhite ~ 10,000-20,000 acres

Herps strongly associated with Longleaf Pine

Gopher frog

"Flatwoods" Salamander

Eastern diamondback

Gopher Tortoise

Louisiana pine snake

Mimic glass lizard

Fire is an essential Management Tool, but are there specific conditions we should be managing for?

Fire Management Species Profiles

Target management of southeastern open pine systems (first round).

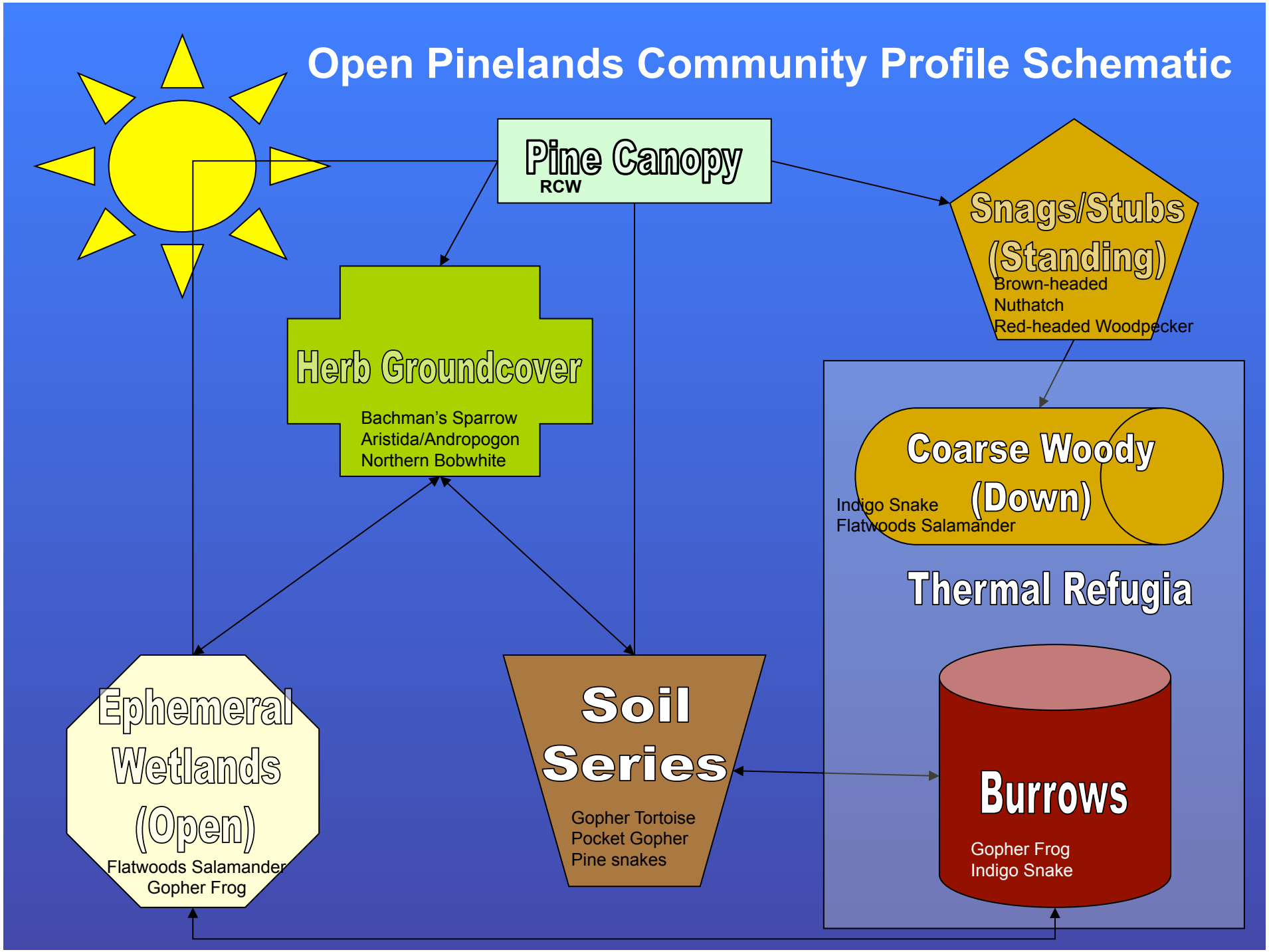
Help to better define habitat management objectives that are SMART and based on Best Available Science

Help to communicate among service professionals and cooperators (fire and biology)

Guide habitat managers in setting local objectives for management in fire adapted systems.

Based directly on the identified needs of specific priority species.

The foundation for monitoring protocols.


Open Pinelands Community Profile Schematic
Pine Canopy
RCW
Snags/Stubs (Standing)
Brown-headed Nuthatch
Red-headed Woodpecker
Herb Groundcover
Bachman's Sparrow
Aristida/Andropogon
Northern Bobwhite
Coarse Woody (Down)
Indigo Snake
Flatwoods Salamander
Thermal Refugia
Ephemeral Wetlands (Open)
Flatwoods Salamander
Gopher Frog
Soil Series
Gopher Tortoise
Pocket Gopher
Pine snakes
Burrows
Gopher Frog
Indigo Snake

Prescribed Fire Management Guidelines developed for:

✓Brown-headed Nuthatch

Drafts:

- Bachman's Sparrow
- Henslow's Sparrow
- Painted Bunting
- Red-cockaded Woodpecker
- Eastern indigo snake
- Frosted and reticulated "flatwoods" salamanders
- Gopher frogs
- Gopher tortoise
- Pine snakes
- Pocket gopher
- Wiregrasses
- American Chaffseed
- Pitcher plants

Under Construction:

- ❑Florida Scrub Jay
- ❑Little bluestem
- ❑Sandhill Cranes

SMART Objectives	
Bachman's Sparrow	***Amophila aestivalis***
• Maintain/increase live bunch grass-forb understory at/to >65% cover, as measured by the end of the first post-treatment growing season (Dunning and Watts 1990).	
• Expose mineral soil surface in patches over at least 10% of the treated area and reduce mean litter depth to <0.5 inches as measured within 1 month post treatment (Cox and Jones 2008).	
• Reduce/maintain woody midstory (1-4 meters tall) cover to/at <20% as measured within 36 months post treatment (Dunning and Watts 1990).	
• Maintain pine canopy cover at <60% as measured within 5 years post treatment (Dunning and Watts 1990).	

Forest Canopy Attributes

- **Total** % Cover 0-80% (30-60%)
  Ft^2/acre B.A. ≤60
  # Trees/acre ≤ 1 (*Scrub Jay and Henslow's Sparrow)
- **Composition** % Pine Stems ≥50%
  % Hardwood Stems < 50%
  #/ha Hardwood Stems ≤ 2.5
  m^2/ha Hardwood B.A. ≤ 3.0
- **Pine Canopy** % Cover ≤70%
- **Stem Size** Pine mean dbh ≥10 in. (25 cm)
- Caution: *FL Scrub Jay and Henslow's Sparrows possible "outliers" bias toward non-forest grassland/xeric scrub condition.

Herbaceous Groundcover

- **(Bunch)Grass-Forb**

Live	% Cover	≥ 25%[1]
< 3 ft tall (Henslow's)	% Cover	≥ 65%
Aristida, seed-bearing	% Cover	≥ 1%

- **Woody Shrub**

Mean Height (Feet)	≤ 2.5-6.0
% Cover	≤ 60%[1]

- **Woody Mid-story**

(1-4 m tall)	% Cover	≤35%

[1]Note: FL Scrub Jay is an outlier @ ≤50% % Grass and >50% Cover Woody Shrub < 6 ft. tall

Summary - Pulling it together

- The EGCJV's Open Pine decision support tool, and the prescribed fire management species management profiles were two separate efforts.
- Together you can start to see how selection of species (and surrogate species in particular) can be used to:
  - develop conservation targets
  - Manage for functional landscapes capable of supporting sustainable populations of fish and wildlife.

Questions?